THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN MACK and WARREN McARTHUR

Appeal No. 96-0096
Application No. 08/094,794[1]

ON BRIEF

Before GARRIS, WEIFFENBACH and HANLON, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 1 through 10 and 17 through 22 which are all of the claims remaining in the application.

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[1] Application for patent filed July 20, 1993.

The subject matter on appeal relates to a process for depositing a borophosphosilicate glass on a substrate which comprises mixing tetramethylcyclotetrasiloxane and trimethylborate together to form a first gaseous mixture, mixing trimethylphosphite and oxygen together to form a second gaseous mixture and heating the second gaseous mixture, and introducing the first and second gaseous mixtures into the reactor at different locations remote from the substrate. This appealed subject matter is adequately illustrated by independent claim 6 which reads as follows:

6. A process for depositing a borophosphosilicate glass on a substrate, comprising the steps of:

supplying an energized substrate;

supplying sources of the gases tetramethylcyclotetrasiloxane, trimethylborate, trimethylphosphite, and oxygen;

mixing the tetramethylcyclotetrasiloxane and trimethylborate together to form a first gaseous mixture;

mixing the trimethylphosphite and the oxygen together to form a second gaseous mixture and heating the second gaseous mixture;

introducing the first gaseous mixture into the reactor and the second gaseous mixture into the reactor at different locations remote from the substrate; and

causing the first gaseous mixture and the second gaseous mixture to mix together and to flow past the energized substrate.

The reference relied upon by the examiner as evidence of obviousness is:

Lagendijk 5,028,566 Jul. 2, 1991

All of the claims on appeal stand rejected under 35 U.S.C. § 103 as being unpatentable over Lagendijk. In the paragraph bridging pages 4 and 5 of the Answer, the examiner expressed his basic obviousness position as follows:

> With respect to claims 1 and 6, Lagendijk teaches mixing TMCTS and oxygen, upon entry into the furnace, to produce an SiO_2 film. Lagendijk fails to recite the sequence of mixing the four constituents (TMCTS, TMPI, TMB and O) for the deposition of a borophosphosilicate film or that the mixtures are divided into two separate mixes and that the second mixture is supplied between the first mixture and the substrate. Lagendijk is silent on how the constituents of the doped SiO_2 film are mixed. It is the examiner's position that Lagendijk's disclosure is generic to all sequences of feeding in the reactive gases and includes mixing the silane and boron sources together in one location, mixing the phosphorous and oxygen in another distinct location and causing the mixtures to form one mixture which

> comes in contact with the substrate with the expectation that any combination would produce similar results. The separate mixtures are eventually mixed into one mixture before contacting the substrate and therefore, it is the examiner's position that the manner in which the gases are supplied would be within the skill of the design engineer working in this art.

This rejection cannot be sustained for several reasons.

In the first place, the examiner is incorrect in stating that "Lagendijk's disclosure is generic to all sequences of feeding in the reactive gases." This disclosure, in fact, is limited to a single specific embodiment which is shown in Figure 1 and described in column 6 wherein the reactive gases are mixed prior to entry into the furnace or reactor. This specific embodiment, of course, is completely distinct from the appellants' claimed process wherein certain reactive gases are mixed to form first and second gaseous mixtures that are introduced into the reactor at different locations remote from the substrate. Indeed, it quite clearly would be impossible to practice this claimed process via the sole embodiment specifically disclosed by Lagendijk as is readily apparent from even a cursory study of patentee's Figure 1 apparatus.

Secondly, the examiner's “generic to all” position is simply not the appropriate test for assessing obviousness within the meaning of 35 U.S.C. § 103. Instead, the test is whether there is something in the prior art to suggest the desirability, and thus the obviousness, of the modification in question. In re Deminski, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986); Fromson v. Advance Offset Plate, Inc., 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed. Cir. 1985). Here, there is simply nothing in Lagendijk's disclosure which would have suggested modifying his process so as to result in the here claimed mixing and introducing steps. On the contrary, it is our perception that one with ordinary skill in the art would have been discouraged from making such a modification because the resulting process would be substantially more complicated with no apparent advantage relative to patentee's process.

In addition to the foregoing, we point out that Lagendijk expressly evaluated various process parameters in Example 1 and that this parameter evaluation did not include any alteration of the manner in which his reactive gases were mixed and introduced into the furnace or reactor. From the

perspective provided by this reference, therefore, it must be concluded that the prior art failed to recognize as a result effective variable the manner in which reactive gases are mixed and introduced into a reactor. In this regard, it is well settled that the optimization of a process parameter would not have been obvious if the parameter was not recognized to be a result effective variable. In re Antonie, 559 F.2d 618, 620, 195 USPQ 6, 9 (CCPA 1977).

To summarize, it is apparent that the examiner's above noted obviousness position is inappropriately based upon unsupported generalities rather than facts (In re Freed, 425 F.2d 785, 787, 165 USPQ 570, 571 (CCPA 1970)) and hindsight derived from the appellants' own disclosure rather than some teaching, suggestion or incentive derived from the applied prior art (Gore v. Garlock, 721 F.2d 1540, 1553, 220 USPQ 303, 312-313 (Fed. Cir. 1983)). It follows that we cannot sustain the § 103 rejection advanced by the examiner on this appeal.

The decision of the examiner is reversed.

Appeal No. 96-0096
Application No. 08/094,794

REVERSED

BRADLEY R. GARRIS Administrative Patent Judge	)
CAMERON WEIFFENBACH Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
ADRIENE LEPIANE HANLON Administrative Patent Judge	)

bae

K. L. Lum
Hughes Aircraft Company
Bldg. C01/Mail Station A-126
P.O. Box 80028
Los Angeles, CA 90080-0028